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The
Florida Entomologist

Official Organ of the Florida Entomological Society

VOL. XXIV DECEMBER, 1941 No. 3

FLORIDA DIPTERA

By JOHN R. MALLOCH, Vero Beach, Fla.

FAMILY RHOPALOMERIDAE

This family is at present represented in Florida, and the United States, by a single species. It is not at all unlikely that more species will be discovered in the tropical section of Florida as most if not all the known species of Rhopalomerinae are associated with various species of palms that occur in this State. Because of this probability I take this opportunity to present a key to the genera of the latter subfamily and to correct an error in the generic assignment of the single Florida species.

Curran in his book on the Families of North American Flies stated that the flies hover like Syrphidae, but the specimens that I have observed and taken acted more like Scatophagidae, being very deliberate in their flight and settling steadily, though as a rule they take rather rapid flight when disturbed.

In March 1937 I was attracted by the odor of fermenting sap to a recently cut stump of a cabbage palm at Vero Beach and was surprised to discover feeding thereon a number of flies that I at once recognized as Rhopalomeridae. Capturing a few I examined them closely and identified them as *Kroeberia floridana* Aldrich. I made no effort to rear the species but took about a hundred of the flies. Subsequently I took, this year, one specimen on a palm trunk in my own yard here.

Lately I have given some time to a study of the family and present the following generic synopsis as an aid to future students.

Key to the Genera

1. No bristle-like hairs on the upper margin of the metathoracic spiracular aperture; first posterior cell of the wing not noticeably narrowed to apex ..... Subfamily *Rhinotorinae*

— One or more quite long bristles or bristle-like hairs on the upper margin of the metathoracic aperture that are directed upward; fourth wing vein sloping much forward so that the first posterior cell is much narrowed to apex ..... Subfamily *Rhopalomerinae*

SUBFAMILY RHINOTORINAE

I do not expect that any of the three known genera of this group will be found in the United States.

SUBFAMILY RHOPALOMERINAE

Key to the Genera

1. Scutellum with numerous erect black bristly discal hairs and six strong bristles, the four basal ones not on the extreme lateral edges but on the sides of disc, the scutellar outline rounded, and the disc convex; arista bare; pteropleura bristly haired, some quite strong bristles on upper portion ..... *Kroeberia* Lindner

— Scutellum without bristly discal hairs and at most four strong marginal bristles, the posterior outline rarely evenly rounded, frequently more or less flattened or concave 2

2. Scutellum very distinctly flattened centrally above, sometimes shallowly grooved to apex, and distinctly longer than its basal width; arista with moderately long hairs ..... *Rhopalomera* Wiedemann

— Scutellum usually rounded in posterior outline, not or very little flattened on dorsum, never with a central groove apically, and not longer than its basal width 3

3. Arista with moderately long hairs; scutellum very short and transverse; ocellar and post-vertical frontal bristles undeveloped; hind tibia not as thick as hind femur ..... *Apophorhynchus* Williston

— Arista bare, or haired, but the ocellar and postvertical pairs of bristles always present 4

4. Arista with moderately long hairs; hind tibia much widened, with a dorsal ridge, and a series of widely spaced bristles situated on slightly elevated bases on the posterodorsal surface ..... *Willistonella* Mik

— Arista bare; hind tibia not thicker than hind femur, without a dorsal ridge and with one or two bristles on the posterodorsal surface that are not situated on elevated bases ..... *Rhytidops* Lindner

KROEBERIA LINDNER

The single known species, *fuliginosa* Lindner, was described from Brazil. I have seen specimens from Panama. It probably does not occur in Florida.

RHOPALOMERA WIEDEMANN

I have seen six or seven species of this genus and some of them may be looked for in Florida.

APOPHORHYNCHUS WILLISTON

This genus is monobasic, the genotype being *flavidus* Williston, described from Brazil. It was unknown to Lindner, and Aldrich made no mention of the genus though there is an unidentified specimen in the collection of the National Museum, from Bolivia. It can hardly be expected to occur in Florida.

WILLISTONELLA MIK

The single species of this genus, *pleuropunctata* (Wiedemann), is widely distributed, having been recorded from Peru, Brazil, Colombia, Ecuador, Surinam, Guiana, and Mexico. I have seen specimens from Panama, and Venezuela. It may occur in southern Florida.

RHYTIDOPS LINDNER

This genus was described to receive a single species from the northern part of Argentina. The species, *chacoensis* Lindner, was represented by a single female specimen of which a photographic figure was given by the describer. This figure shows all the features common to it and the species described by Aldrich as *Kroeberia floridana,* including the furrowed genae so that there can be no reasonable doubt about their being congeneric. In fact I very seriously doubt that they will prove to be specifically distinct but in the absence of specimens from Argentina I defer a definite statement on the synonymy.

In any event Aldrich's species must be known as *Rhytidops floridana* (Aldrich).

It is very common at cut stumps of Cabbage Palm at Vero Beach during most of the year.

ANNUAL CIVIL SERVICE EXAMINATION ANNOUNCED FOR JUNIOR PROFESSIONAL ASSISTANTS AND STUDENT AIDS

The United States Civil Service Commission has just announced two examinations. They are the annual "Junior Professional Assistant" and "Student Aid" examinations designed to recruit young college graduates and junior and senior students for positions in the Government service. Applications for both these examinations must be on file with the Commission's Washington office not later than February 3, 1942.

Optional branches included in the Junior Professional Assistant examination this year are (all in the junior grade, $2,000 a year): Agricultural economist, agronomist, aquatic biologist, archivist, bacteriologist, biologist, chemist, entomologist, forester, geologist, junior in household equipment, olericulturist, pomologist, public welfare assistant, range conservationist, soil scientist, State Department Assistant, and statistician. A 4-year college course leading to a bachelor's degree is required, with major graduate or undergraduate study in the field of the optional subject. Senior or graduate students may be admitted to the examination, and may, upon attaining eligibility, receive provisional appointment, but cannot enter on duty until evidence of the successful completion of the required college course is furnished. Applicants must not have passed their thirty-fifth birthday.

BIOLOGICAL CONTROL OF *Diatraea saccharalis* IN THE FLORIDA EVERGLADES DURING 1940 AND 1941

J. W. WILSON[1]

E.M.N.

The sugarcane borer, *Diatraea saccharalis* Fab. is the most destructive pest of sugarcane in Florida. As its common name indicates, the larva feeds on the leaves for a few days after which it bores into the cane stalk where it completes its larval and pupal development. Because of the difficulty of reaching the larvae with insecticides biological control methods are the most promising. Eleven species of parasites have been introduced into Florida and Louisiana in an attempt to control the sugarcane borer. Of these, three have become well established in Florida.

During the spring and summer of 1940 the United States Sugar Corporation purchased three million of the native egg parasite *Trichogramma minutum* Riley and in June, 1941 fifty mated female larval parasites, *Metagonistylum minense* Towns. were received from Mr. J. W. Ingram of the Bureau of Entomology. *Bassus stigmaterus* Cress. has been spreading and gradually increasing in importance since its introduction in 1932.

Trichogramma minutum Riley: This egg parasite becomes quite abundant in the sugarcane fields of Louisiana and Florida late in the growing season. Numerous attempts to increase its effectiveness by mass liberation during the spring and summer months have been made in Louisiana and other cane growing countries.

Of the three million *Trichogramma* purchased from the California Biological Service, Glendale, California, 1,820,000 were used in this experiment. The remainder were liberated in fields belonging to the United States Sugar Corporation. The author was assisted by Mr. J. V. Fourmy of the United States Sugar Corporation in the selection of the fields to receive the parasites and in the liberation of them. The *Trichogramma* were shipped in grain moth eggs attached to pieces of cardboard bearing 500 eggs in paper cups. Upon receipt the package was opened and the parasites held in an open room until the adults began to emerge. In the field a corner of the cup was torn off and carried down the cane row until most of the parasites had left the cup when it was attached to a cane leaf. The effectiveness of the liberations was judged by a comparison of the percent of joints bored at harvest time the year before the releases were made

[1]The author is indebted to D. J. Taylor for assistance with the inoculation of the borers and rearing of the Amazon fly.

and the harvest following the liberations. It was impossible to make comparisons of the sucrose or tonnage yields because of the variation between fields in soil fertility and age of the cane.

Releases of the parasites were begun April 17 and continued as shown in Table 1 through August 16. As recommended by Hinds and Spencer (1) and Hinds and Osterberger (2), small numbers of the parasites were liberated in April and larger numbers during July and August. Releases were arranged so that the number released per acre ranged from 1,500 to 11,000 per acre.

TABLE 1. LOCATION AND NUMBER OF *Trichogramma minutum* LIBERATED AT CANAL POINT, FLORIDA, WITH PERCENT OF JOINTS BORED BEFORE AND AFTER THE LIBERATIONS.

Field Number	Number Parasites Liberated	Date Parasites Liberated	Number Parasites Per Acre	Percent Joints Bored	
				1939-40	1940-41
27-EF-11	100,000	4/19/40	1,500	5.25	8.46
27-AB-11	100,000 100,000	4/21/40 6/10/40	3,200	6.02	4.64
27-EF-23	100,000 100,000 100,000	4/19/40 6/10/40 7/16/40	4,000	5.09	1.16
27-CD-26	120,000 200,000 200,000	6/13/40 7/16/40 8/16/40	7,200	17.14	.....
27-IJ-11	100,000 200,000 200,000 200,000	4/17/40 6/10/40 7/16/40 8/16/40	11,000	7.61	7.98
27-OP-11	0	Check		8.34	0.23
27-OP-22	0	Check		3.42	0.15
27-CD-35	0	Check		3.11	1.80

As shown in Table 1 the field receiving 1,500 *Trichogramma* per acre showed an increase in the percent of joints bored, the fields receiving 3,200 and 4,000 *Trichogramma* per acre showed a decrease in the borer population as indicated by the percent of the joints bored while the field receiving 11,000 *Trichogramma* per acre showed a slight increase in borer population. In the three check fields in which no *Trichogramma* were liberated there was a very pronounced reduction in the percent of joints bored. From this data it must be concluded that the release of 11,000 *Trichogramma* per acre did not appreciably de-

crease the damage caused by cane borers. In January, 1941 Janes and Bynum (4) published figures showing that release of ten to forty thousand *Trichogramma* per acre were of no value in the control of the sugarcane borer in Louisiana.

Metagonistylum minense Towns.: Because of the success of this parasite in Puerto Rico, British Guiana, and other cane growing countries the Amazon river strain of this species was introducted into Louisiana in May, 1938 by the Bureau of Entomology. In September, 1938 three colonies of flies reared at the Sugarcane Insects Laboratory, Bureau of Entomology and Plant Quarantine, Houma, Louisiana were released in cane fields of the Everglades by J. W. Ingram and the author. In 1939 and 1940 colonies of the Sao Paulo strain of Amazon fly, also reared at Houma, were released by Mr. Ingram and the author. No recoveries have been made from these releases. In June 1941, 45 live and mated females of the Sao Paulo strain were received by air mail from Mr. Ingram for breeding purposes.

The technique used was essentially that described by Ingram, Holloway and Wilson (3). The borer larvae used as host material were collected by the United States Sugar Corporation from their fields. Usually dead hearts containing borer larvae were collected the day before they were used as host for the parasites. After inoculation the individual larvae were placed in one and two ounce salve boxes with small pieces of corn stalk as food for the borer larvae. Food was changed every two to four days as the need arose. Usually two or three changes were sufficient. The puparia were placed in petri dishes lined with moistened paper towels, 50 to 75 puparia in each petri disk, and these were placed in emergence cages. Four hundred and eighty of the borers inoculated with second generation parasites were placed in pans with chopped corn stalks for food. These larvae yield 45 percent parasite puparia as compared with 78.3 percent of puparia from inoculated borers placed in individual boxes. For this reason all of the remaining borer larvae inoculated were placed in individual boxes.

Data on the number of borers inoculated and the number of adult parasites obtained are given in Table 2. From a total of 3,535 borer larvae inoculated, 1,718 adult parasites were obtained. Of the 1,718 parasites 802 were females and 916 males, a ratio of one female to 1.14 males.

The newly emerged adult flies were placed in cylindrical cages 10 inches in diameter and 14 inches high and fed a sugar

solution on pieces of cotton placed on top of the cage. The cages were placed outdoors in the shade of a tree during the morning of the first two days and were liberated in the cane fields on the third or fourth day. Colonies of from 22 to 98 mated females were liberated in 18 fields. During September and October collections of borer larvae were made in these fields, but recoveries were obtained in only two of the 18 fields.

TABLE 2. DATA ON BREEDING OF AMAZON FLIES AT BELLE GLADE, FLORIDA, 1941.

Date of Inoculation	Generation Number	Number of Borers Inoculated	Number of Parasites Obtained	Percent of Parasites Obtained from Borers Inoculated
June 14-19	1	734	313	42.64
July 10-16	2	1185	534	45.06
August 6-11	3	856	464	54.20
September 3-9	4	760	407	53.55
Total		3535	1718	48.60

Bassus stigmaterus (Cress.) : This wasp was introduced into Florida in shipments of *Ipobracon rimac* Wolc. in 1932. Numbers of the adult female and one adult male were reared from borer larvae collected for rearing the Amazon fly. Since this parasite is spreading and increasing in importance attempts were made to rear it in the laboratory.

On September 15 forty-three borer larvae were placed in pieces of corn stalk in two of the cages used for holding the Amazon flies with nine *Bassus* females. The *Bassus* were fed sugar solution absorbed by cotton and were kept in the cage with the borers for seven days. At the end of this time the borer larvae were removed to individual boxes and fed pieces of corn stalk. No *Bassus* larvae emerged from these borer larvae. From 17 borer larvae placed in shell vials with a *Bassus* female in each vial one *Bassus* larvae emerged after 29 days. A total of 33 borer larvae in pieces of corn were placed in pint jars, two to five larvae and one to three *Bassus* females to each jar and covered with cheesecloth produced one *Bassus* larva in 24 days. From material collected in the field for determining the

TABLE 3. COLLECTIONS OF BORER STAGES MADE IN SUGARCANE FIELDS OF THE EVERGLADES DURING SEPTEMBER AND OCTOBER, 1941, WITH DATA ON THE STAGES OF *Bassus stigmaterus* FOUND IN THESE FIELDS.

Location Field Number	Borer Stages Collected			Total Stages Collected Including *Bassus* Cocoons	*Bassus stigmaterus*				Percent Parasitism
	Larvae	Pupae	Pupal Skins		Larvae	Cocoons	Empty Cocoons	Total *Bassus*	
27-IJ-12	19	3	10	37	5	2	3	10	27.0
28-IJ-19	36	7	23	73	17	2	5	24	32.9
28-EF-19	33	9	10	58	18	1	5	24	41.4
28-KL-19	443	61	0	528	115	23	1	139	26.3
28-KL-19	22	10	20	62	8	5	5	18	29.0
46-H-7	6	3	1	10	1	0	0	1	10.0
46-D-7	21	3	3	28	1	1	0	2	7.1
46-H-7*	34	6	4	44	9	2	0	11	25.0
27-AB-11	14	2	13	29	1	0	0	1	3.4
27-O-12	34	6	2	45	7	2	1	10	22.2
28-MN-19	36	1	15	58	10	2	4	16	27.6
27-AB-12	29	3	29	65	1	1	3	5	7.6
17-IM-26	21	3	27	55	1	2	2	5	9.1

*Collection made with Mr. J. W. Ingram and Mr. E. K. Bynum of the U. S. Bureau of Entomology and Plant Quarantine.

amount of parasitization, the last *Bassus* larva emerged as long as 18 to 29 days after the collection was made. Thus the larval period of *Bassus stigmaterus* lasts from 18 to 29 days. Twenty-one *Bassus* larvae just emerged from borer larvae were observed to spin their cocoons and emerge as adults as follows: 1 in 8 days, 16 in 9 days and 4 in 10 days, giving an average of 9.14 days for the pupal period.

Collections of borer stages were made in 20 different localities during September and October, 1941 and *Bassus stigmaterus* were recovered at 13 of these localities. Data on the number of stages collected and the percent parasitization are given in Table 3. It will be noted that the percent of parasitization ranges from 3.4 to 41.4 percent indicating that this parasite has become widely established and is becoming economically valuable in borer control.

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The
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Gainesville, Florida

VOL. XXIV DECEMBER, 1941 No. 3

J. R. WATSON, Gainesville.....Editor
E. W. BERGER, Gainesville.....*Associate Editor*
J. W. WILSON, Belle Glade.....*Business Manager*

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PROCEEDINGS OF THE ANNUAL MEETING OF THE FLORIDA ENTOMOLOGICAL SOCIETY

Gainesville, Florida, December 5-6, 1941

The 1941 Annual Meeting of the Society was held in the Agricultural College on the University of Florida Campus with President Homer Hixson presiding. In his presidential address he pointed out and discussed some of the relationships between entomologists and citizens of the state and indicated some ways in which greater service could be rendered by entomologists. Particular emphasis was laid on the problem of pest control and the speaker suggested that there is a great need for trained entomologists in this field of work.

A symposium entitled "Entomological Services in Florida," was an important and interesting feature of the program. Dr. H. Harold Hume, Dean of the College of Agriculture, introduced the speakers and led the discussion in a graciously capable manner. Hon. Nathan Mayo, Commissioner of Agriculture, prepared a paper on the Entomological Services of the Florida Department of Agriculture. He was unable to be present and the paper was presented by his son, Nathan Mayo, Jr. This paper outlined the services and discussed some of the problems encountered by the Department in administering the Florida Insecticide Law. W. W. Yothers, recounting some of his experiences, showed his usual wisdom and wit in his discussion of the Problems of the Consulting Entomologist. J. R. Watson outlined and discussed some of the insect problems which are now receiving the attention of entomologists of the Agricultural

Experiment Stations. A. C. Brown spoke of those functions of the State Plant Board having to do with Regulatory and Quarantine Services in Entomology. Particular emphasis was placed on the increasing danger of foreign insect pests getting into this country in service planes which fly to and from foreign countries and often land at remote air fields where adequate inspection cannot be given. R. L. Miller, discussing Insecticide Problems in Entomological Service, called attention to the growing complexity of insecticidal sprays and dusts and mentioned some of the difficulties involved in the manufacture of insecticides that are effective and safe.

Other papers presented during the meeting were: Parasites of the Sugar Cane Borer Released in the Cane Fields of the Everglades During 1940-41, by J. W. Wilson; The Changing Status of Natural Agencies in Commercial Control of Scale on Citrus, by W. L. Thompson; Fruit Piercing Moths in Cuba, by W. W. Yothers; and Further Tests with Thallium Baits for the Control of Fire Ants, by B. V. Travis. A great deal of interest was shown in all the papers and some of them brought forth some lively discussions.

On Friday evening with Dr. R. L. Miller acting as toastmaster, the Annual Dinner of the Society was enjoyed by about thirty-five members and guests. Mrs. Horton H. Hobbs honored the assemblage with two piano selections which were rendered in a pleasing and talented manner. Following the dinner, Dr. Herbert Osborn, the first Honorary Member of the Society, gave a most interesting talk on Early Work and Workers in Southern Entomology. This was illustrated with a large number of lantern slides of photographs of workers who have been closely identified with the development of entomology in the South.

BUSINESS MEETING

The business session of the Society was held Saturday morning, December 6, 1941.

REPORT OF THE SECRETARY

The report of the Secretary was read and approved.

REPORT OF THE TREASURER-BUSINESS MANAGER

The Treasurer-Business Manager read his report covering receipts and disbursements for the past year. B. V. Travis, serving as the Auditing Committee, moved the acceptance of

this report, stating that he had examined the books and had found the accounts accurate and the books in order. This was seconded by J. C. Goodwin and passed. This report is published on another page of this issue.

COMMITTEE ON DUES AND SUBSCRIPTIONS

At the 1940 annual meeting, the Society authorized the incoming president to appoint a committee to investigate the cost of enlarging the FLORIDA ENTOMOLOGIST and to consider the need or desirability of increasing dues and subscription rates. The committee appointed by President Hixson consists of: J. R. Watson, Chairman; W. P. Hunter; H. K. Wallace; J. W. Wilson; and C. B. Wisecup. Professor Watson reporting for this committee, stated that the proposal to increase dues had not elicited a very enthusiastic response from the members. He further stated that an increase had not been needed during the past year as sufficient papers had not been submitted to the Editor to permit the publication of the four issues of regular size. No recommendations were made by the committee.

COMMITTEE ON INSECT LIST PROJECT

T. H. Hubbell and J. R. Watson reported on the W.P.A. projects having to do with insects. Dr. Hubbell briefly outlined the work that has been done on the species catalogue and bibliography of the Orthoptera of the New World. Professor Watson stated that most of the available literature has been examined and all records of Florida insects found there have been entered on filing cards. He raised the question of the best procedure to be followed to secure records from Florida insect specimens in the collections of museums and other institutions. There was then brought to the attention of the members the W.P.A. ruling which does not allow workers to be employed continuously on a project for more than eighteen months. However, persons who have worked eighteen months may be reemployed after having been off for two weeks, provided they have had private employment during this period. Two of the workers have been on the insect project for nearly eighteen months and their services will be lost unless some private employment is provided for them for a two weeks' period. T. H. Hubbell moved that the Society allocate the sum of thirty dollars for the employment of these two workers. This was seconded by L. W. Ziegler and passed.

MEMBERSHIP COMMITTEE

The Society at the 1940 meeting authorized President Hixson to appoint a standing membership committee. The committee named by him consists of: J. W. Wilson, Chairman; A. H. Madden; R. L. Miller; Herbert Spencer; and L. W. Ziegler. Dr. Wilson speaking for this committee recommended that the following associate members be raised to the rank of active membership: Wallace Dekle; Stephen S. Easter; Wm. S. Fletcher; Mrs. C. N. Grimshaw; Norman C. Hayslip; C. D. Kime; W. W. Lawless; W. R. Lyle; H. C. Moennich; T. W. Reed; and J. C. Stancil. The recommendation was also made that the following persons be elected to associate membership: M. L. Anderson; J. G. Brunton; P. W. Calhoun; J. C. Crawford; W. E. Dove; A. B. Gurney; Arthur M. Hill, Jr.; R. F. Joyce; C. F. Ladeburg; M. D. Leonard; J. M. McGough; and A. M. Phillips. J. L. Ingle was recommended for student membership.

K. E. Bragdon moved the acceptance of the recommendations of the committee and instructed the secretary to cast an unanimous ballot for the candidates named. This motion was seconded by J. R. Watson and passed.

In order to clarify certain points regarding membership and dues, the Membership Committee recommended the following changes in the By-Laws of the Society: (1.) Insert under Article I:

"Section 2.—The Membership Committee may at any time restore to full active membership, any former active member who for good cause had allowed his membership to lapse. Applications for reinstatement by former members of other than active rank, shall be considered by the Membership Committee and shall be submitted by them together with their recommendations to the Society for final action.

"Section 3.—Student members of one year's standing or longer, may, on recommendation of the Membership Committee, be elected to active membership at any annual meeting."

(2.) The first sentence under Article IV, Section 1, is rather ambiguous regarding the membership status of University and High School students. This now reads as follows: "The annual dues of associate and active members shall be $1.00, except for University or High School students who may affiliate with the Society by the payment of $ .50." It is recommended that this be amended to read as follows: "The annual dues of associate and active members shall be $1.00. University and High School students affiliated with the Society shall pay annual dues of fifty cents."

(3.) Insert under Article IV:

"Section 2.—Applications for membership in the Society will be received by the Membership Committee at any time. Dues paid at time of making application shall apply to the year immediately following election to membership. Applicants shall be furnished the FLORIDA ENTOMOLOGIST without cost while their applications are pending."

G. B. Merrill moved the acceptance of the recommendations in regard to the By-Laws. This was seconded by W. W. Lawless and passed.

During the year the Society has lost one member by death and seven by resignation. The deceased member is Thos. H. Jones, Morristown, N. J. At the close of the year the Society roll included 97 active and associate members, 16 student members, and five honorary members.

COMMITTEE ON NOMINATIONS

At the opening session of the meeting President Hixson named a Committee on Nominations consisting of H. K. Wallace, G. B. Merrill, and Willis Mathis. The committee named the following as candidates for the various Society offices and positions to be filled by election: President, K. E. Bragdon; Vice-President, T. H. Hubbell; Secretary, A. N. Tissot; Editor of the FLORIDA ENTOMOLOGIST, J. R. Watson; Associate Editor, E. W. Berger; Member of the Executive Committee (for two year term), L. S. Maxwell. J. C. Goodwin moved that the recommendations of the committee be acepted and that the secretary be instructed to cast an unanimous ballot for the candidates named. This was seconded by G. B. Merrill and passed.

J. C. Goodwin moved adjournment, which was seconded by R. L. Miller. The Society adjourned at 12:30 P. M.

A. N. TISSOT, *Secretary*

FOR SALE

Back Numbers of the FLORIDA ENTOMOLOGIST: Volumes I and II, $5.00 each; Volumes III to V, $2.00 each; Volumes VI to XXIII, $1.00 each; Index Volumes I to XIX, $1.00 each. Send orders to J. W. Wilson, Experiment Station, Belle Glade, Florida.

REPORT OF THE TREASURER-BUSINESS MANAGER OF THE FLORIDA ENTOMOLOGICAL SOCIETY

For the Year Ending November 30, 1941

Receipts

Balance, November 30, 1940	$101.81
Dues and Subscriptions	145.00
Advertising	80.00
Sale of Index and Back Numbers	43.50
Refund on Bank Charges	.25
Collected on Old Account	30.37
Total Receipts	$400.93

Disbursements

Pepper Printing Company, Printing the FLORIDA ENTOMOLOGIST and Supplies	$225.77
Last Year's Meeting (Programs, Decorations, Free Tickets)	25.81
Postage	23.50
Exchange to Bank	2.50
Subscriptions Refunded	1.55
Total Disbursements	$279.13
BALANCE, NOVEMBER 30, 1941	$121.80

Signed: J. W. WILSON

I hereby certify that the books have been examined and found to be in order, and that the above statement was found to be correct.

Signed: B. V. TRAVIS,
Auditing Committee

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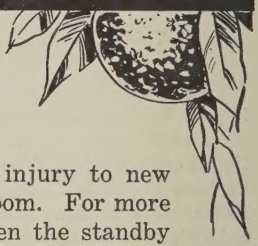

Protect the fruit and foliage from *Citrus Aphis*. Spray with "Black Leaf 40" while the foliage is young and the infestation is light. Prevent injury to new growth, especially while trees are in bloom. For more than 20 years "Black Leaf 40" has been the standby of particular growers.

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For many years leading authorities have endorsed "Black Leaf 40." It kills insects not only by contact (hitting) but also by fumes. When you mix "Black Leaf 40" with lime-sulphur, oil-emulsion, Bordeaux or calcium arsenate, or soap, you convert nicotine sulphate into volatile nicotine with powerful "gassing" properties.

Likewise, when you dust with Nicotine Dust, insects are killed by actual contact of the dust with their bodies and also by the powerful nicotine gas.

"Black Leaf 40" is a highly concentrated, uniform product. A little goes a long way —therefore economical. May be added to other standard sprays.

TOBACCO BY-PRODUCTS & CHEMICAL CORP.,

Incorporated Louisville, Kentucky

KILLS BY CONTACT AND FUMES